



Thermal Insulation

For a number of years prior to the introduction of the Space Shuttle, Johnson Space Center conducted research on advanced flame-resistant materials toward minimizing fire hazard in the Shuttle and other flight vehicles. From that research emerged a polyimide foam material that resists ignition better than any material used earlier. It is applicable not only to aircraft and spacecraft, but also to surface transportation systems such as rapid transit cars, trains, buses and ships. Known commercially as Solimide®, it has application in such vehicles for acoustical treatment and for door, wall and ceiling panels; as a means of reducing vibrations (see page 96); and as thermal insulation. In the latter application, it is also useful in industrial equipment.

An example is the use of Solimide in the ThermoStream® System shown, one of several systems manufactured by Temptronic Corporation, Newton, Massachusetts for testing such electronic devices as semiconductor wafers, chips, components, modules and circuit boards over a wide range of temperatures. Temptronic's equipment offers a different approach to electronic thermal testing, involving the use of localized temperature-inducing systems rather than conventional temperature chambers. Chamber testing poses difficulties

in employing many types of automatic test equipment, because the item in the chamber is physically separated from the test socket; the conventional solution has been to run wires from the device being tested in the chamber to the test socket outside. Temptronic systems make this cumbersome procedure unnecessary by applying temperature directly to the object undergoing test. In the ThermoStream System, Solimide is used as thermal insulation to prevent the outlet air/gas from affecting the temperature of the tester circuitry.

Solimide was originally developed under contract from Johnson Space Center by Solar Turbines International, San Diego, California, a division of International Harvester. The assets and business of International Harvester's Solimide operations were subsequently acquired by Imi-Tech Corporation, Elk Grove Village, Illinois, which is producing the material for a variety of defense, industrial and transportation vehicle applications.

®Solimide is a registered trademark of Imi-Tech Corporation.

®ThermoStream is a registered trademark of Temptronic Corporation.